

REMARKS

The present invention relates to a polarizing glass of defined composition.

In the Office Action of August 22, 2003, claim 1 was rejected under 35 U.S.C. § 112, second paragraph, with respect to the term “substantially” in the phrase “substantially does not comprise CuO”, and claims 1, 2 and 4-7 were rejected under 35 U.S.C. §103(a) based on Prassas in view of Borrelli et al, Yamashita in view of Borrelli et al, and Suzuki in view of Borrelli et al.

In the present Amendment, Applicants have amended claim 1 to further clarify that the polarizing glass of the present invention “substantially does not comprise CuO and CeO₂” This amendment is supported, e.g., by the disclosure in paragraph [0010] at page 4 and by Table 1 at pages 10-11.

Applicants address the rejections specifically below.

Claims 35 U.S.C. §112 Rejection

The meaning of “substantially does not comprise CuO”, now “substantially does not comprise CuO and CeO₂” is that the polarizing glass of claim 1 is prepared with starting materials which do not contain Cu and Ce as main components, but the starting materials may contain Cu and Ce as impurities.

In addition, in the present invention, the deposition of metallic silver by the reduction of silver halide particles during heat treatment is inhibited by K₂O>Li₂O+Na₂O rather than by CuO like Prassas, Yamashita, and Suzuki, or by CeO₂ like Borelli.

The 35 U.S.C. § 103 Rejections

Prassas in view of Borrelli et al

Claims 1, 2, and 4-7 were rejected as being unpatentable over Prassas (U.S. Patent 4,891,336) in view of Borrelli et al (U.S. Patent 5,252,524) under 35 U.S.C. § 103(a).

The polarizing glass of the amended claim 1 herein does not contain CuO and CeO₂ in order to prevent the reduction of the silver halide (silver ions) to metallic silver during heat treatment. In the present invention, the reduction is inhibited by controlling the glass composition to K₂O>Li₂O+Na₂O.

In contrast, the photochromic glass of Prassas contains CuO, and the polarizing glass of Borrelli contains CeO₂ in order to prevent the reduction of the silver halide (silver ions) to metallic silver during heat treatment.

In the Office Action, it was supposed that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a glass of Prassas modified based on Borrelli et al because the resultant cerium substituted glass would have the polarizing effects of Borrelli et al without the photochromatic properties of Prassas.

However, the resultant cerium substituted glass would still be different from the polarizing glass of the amended claim 1 herein, since the polarizing glass of the present invention does not contain CuO and CeO₂, as mentioned above.

Thus, claims 1, 2, and 4-7 are patentable over Prassas in view of Borrelli et al under the standards of 35 U.S.C. § 103(a), properly applied.

Yamashita et al in view of Borrelli et al

Claims 1, 2, and 4-7 were also rejected as being unpatentable over Yamashita et al (U.S. Patent 3,998,647) in view of Borrelli et al (U.S. Patent 5,252,524) under 35 U.S.C. § 103(a).

The photochromic glass of Yamashita et al contains CuO and the polarizing glass of Borrelli contains CeO₂.

In the Office Action, it was supposed that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a glass of Yamashita et al modified based on Borrelli et al because the resultant cerium substituted glass would have the polarizing effects of Borrelli et al without the photochromic properties of Yamashita et al.

However, the resultant cerium substituted glass would still be different from the polarizing glass of the amended claim 1 herein, since the polarizing glass of the present invention does not contain CuO and CeO₂, as mentioned above.

Thus, claims 1, 2, and 4-7 are patentable over Yamashita et al in view of Borrelli et al under the properly applied standards of 35 U.S.C. § 103(a).

Suzuki et al in view of Borrelli et al

Claims 1, 2, and 4-7 were rejected as being unpatentable over Suzuki et al (U.S. Patent 4,794,435) in view of Borrelli et al (U.S. Patent 5,252,524) under 35 U.S.C. § 103(a).

The photochromic glass of Suzuki et al contains CuO and the polarizing glass of Borrelli contains CeO₂.

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In the Office Action, it was supposed that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a glass of Suzuki modified based on Borrelli et al because the resultant cerium substituted glass would have the polarizing effects of Borrelli et al without the photochromic properties of Suzuki et al.

However, the resultant cerium substituted glass would still be different from the polarizing glass of the amended claim 1 herein, since the polarizing glass of the present invention does not contain CuO and CeO₂, as mentioned above.

Thus, claims 1, 2, and 4-7 are patentable over Suzuki et al in view of Borrelli et al under the standards of 35 U.S.C. § 103(a).

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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